UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/036,794	11/07/2001	Yeshik Shin	594728114US	5404

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EXAMINER
KERVEROS, JAMES C

ART UNIT	PAPER NUMBER
2133	

DATE MAILED: 12/01/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

VW

Office Action Summary	Application No. 10/036,794	Applicant(s) SHIN ET AL.
	Examiner JAMES C KERVEROS	Art Unit 2133

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>07 September 2004</u>.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-11,13-31 and 33* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-11, 13-31 and 33* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *15 April 2002* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

1.   This is a Final Office Action in response to Amendment filed September 7, 2004,

in reply to the Office Action mailed on May 6, 2004.

Claims 12 and 32 are cancelled. Claims 1-11, 13-31 and 33 are now pending

and are presently under examination.

2.   The abstract of the disclosure is objected to because on lines 8 and 10, the term

"may" is a legal phraseology. The abstract should be in narrative form and it should

positively describe the claimed invention. In this case the tem "may" implies optional

action. Correction is required. See MPEP § 608.01(b).

3.   Prior Office Action Claim Objections and Rejections under 35 U.S.C. 112, second

paragraph is hereby withdrawn in view of the amendment.

Claim Rejections - 35 USC § 112

4.   The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out
> and distinctly claiming the subject matter which the applicant regards as his
> invention.

Claims 10, 11, 13-20, 30, 31 and 33 are rejected under 35 U.S.C. 112, second

paragraph, as being indefinite for failing to particularly point out and distinctly claim the

subject matter which applicant regards as the invention.

5.   Independent claim 10 recites the limitation, "wherein the communications device

that transmitted the data to the switch is not notified of the error", which lacks

antecedent basis for "the communications device". Since "the identified communications

device" receiving the error message is not the same as, "the communications device"

not notified of the error, the two devices should be clearly defined as two distinguishable

separate devices.

6.   Independent Claim 30 recites the limitation " transmitting an error message to the

communications device that transmitted the data to the switch". There is insufficient

antecedent basis for the limitation "the communications device". Since "the identified

communications device" receiving the error message is not the same as, "the

communications device" not notified of the error, the two devices should be clearly

defined as two distinguishable separate devices.

Claim Rejections - 35 USC § 102

7.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a
foreign country or in public use or on sale in this country, more than one year
prior to the date of application for patent in the United States.

Claims 1-11, 13-31 and 33 are rejected under 35 U.S.C. 102(b) as being

anticipated by Haartsen (US 5699367), issued: December 16, 1997.

Regarding independent Claim 1, Haartsen discloses a method in a network of

switches for handling errors, such as data transmission over a chain of cascaded links

that makes use of packet retransmission for error correction, Figures 1-5, comprising:

Receiving a request, such as transaction Automatic Repeat Query (ARQ) using

(local ARQ protocol) at a switch located in a (RELAY STATION) from an initiator

communications device (END STATION A), by applying a distributed local ARQ

protocol over the nonsensitive link coupled between the (END STATION A) and the

(RELAY STATION), as shown in FIG. 4, and transmitting the transaction request (local

ARQ protocol) through the network (RELAY STATION) to a responding

communications device (END STATION B), by applying a distributed local ARQ

protocol over the sensitive link coupled between the (RELAY STATION) and the (END

STATION A), as shown in FIG. 4.

Receiving a transaction response [acknowledgement signal (ACK)] at a switch

located in (RELAY STATION) from the responding communications device (END

STATION B) and transmitting the transaction response (ACK) through the network

(RELAY STATION) to the initiator communications device (END STATION A). In this

case, the destination (END STATION B) checks the transmitted packet for correctness

and either sends an acknowledgement signal (ACK) to the initiator communications

device (END STATION A), with the packet number or a non-acknowledgement signal

(NAK) in case the packet has been correctly or incorrectly received, respectively, (Col.

3, lines 45-50).

And upon the (END STATION B) detecting an error, such as a cyclic-

redundancy-check CRC or forward-error-correction FEC in the data packet, during the

transmission of the transaction response (ACK), then the (END STATION B)

terminates the transmission and transmits an error message, such as a non-

acknowledgement signal (NAK) to the initiator communications device (END STATION

A) in case the packet has been incorrectly received by the (END STATION B).

Regarding independent Claim 10, Haartsen discloses a method in a switch for handling errors, such as data transmission over a chain of cascaded links that makes use of packet retransmission for error correction, Figures 1-5, including the common limitations, as applied to claim 1, of detecting an error and transmitting an error message to the initiator communications device (END STATION A), such as a cyclic-redundancy-check CRC or forward-error-correction FEC occurring in the data packet during transmission.

In addition to the common limitations of claim 1, above, Haartsen discloses identifying the communications device such as (END STATION A) that initiated the transmission of the data packets having error detection coding (D) and packet number (N). In this case, (END STATION A) acts as the destination and checks the local error detection coding. Once the packet has been correctly received, the destination acknowledges receipt of the packet by acknowledging the end-to-end packet numbering to the source (END STATION A), (col. 3, lines 5-15).

Regarding independent Claim 21, Haartsen discloses a communications device, such as data transmission over a chain of cascaded links that makes use of packet retransmission for error correction, Figures 1-5, including the common limitations, as applied to claim 1, of detecting an error and transmitting an error message to the initiator communications device (END STATION A), such as a cyclic-redundancy-check CRC or forward-error-correction FEC occurring in the data packet during transmission.

In addition to the common limitations of claim 1, above, Haartsen discloses identifying the communications device such as (END STATION A) that initiated the

transmission of the data packets having error detection coding (D) and packet number

(N). In this case, (END STATION A) acts as the destination and checks the local error

detection coding. Once the packet has been correctly received, the destination

acknowledges receipt of the packet by acknowledging the end-to-end packet

numbering to the source (END STATION A), (col. 3, lines 5-15).

Regarding independent Claim 30, Haartsen discloses a switch, such as data

transmission over a chain of cascaded links that makes use of packet retransmission

for error correction, Figures 1-5, including the common limitations, as applied to claim

1, means of detecting an error and transmitting an error message to the initiator

communications device (END STATION A), such as a cyclic-redundancy-check CRC

or forward-error-correction FEC occurring in the data packet during transmission.

In addition to the common limitations of claim 1, above, Haartsen discloses

identifying the communications device such as (END STATION A) that initiated the

transmission of the data packets having error detection coding (D) and packet number

(N). In this case, (END STATION A) acts as the destination and checks the local error

detection coding. Once the packet has been correctly received, the destination

acknowledges receipt of the packet by acknowledging the end-to-end packet

numbering to the source (END STATION A), (col. 3, lines 5-15).

Regarding Claims 2, 3, 4, 5, 20, Haartsen discloses an initiator communications

device (END STATION A) responsible for handling the error, when a non-

acknowledgement signal is produced, then the source (END STATION A) responds

with a retransmission of the incorrect packet. If an acknowledgement signal is not

received within the time-out period, the source (END STATION A) automatically

retransmits the packet using the Automatic Repeat Query (ARQ) or Automatic Repeat

Request which is more secure than the use of non-acknowledgement signals. (Col. 3,

lines 40-45). The initiator communications device (END STATION A) then forwards

error message (NAK) to an application layer, such as a portable data device such as a

laptop, PDA, FIG. 2.

Regarding Claim 6, Haartsen discloses upon the detecting an error (NACK)

during the transmission of (ARQ), such as a cyclic-redundancy-check CRC or forward-

error-correction FEC in the data packet, an (END STATION B) which terminates the

transmission and transmits an error message, a non-acknowledgement signal (NAK) to

the initiator communications device (END STATION A) in case the packet has been

incorrectly received by the (END STATION B).

Regarding Claim 13, Haartsen discloses an (END STATION B), which transmits

an error message, such as a non-acknowledgement signal (NAK) to the initiator

communications device (END STATION A).

Regarding Claim 16, Haartsen discloses an (END STATION B) for detecting an

error (NSCK), such as a cyclic-redundancy-check CRC or forward-error-correction FEC

in the data packet, during the transmission of ARQ from the identified device (END

STATION A) to the (END STATION B).

Regarding Claim 17, Haartsen discloses an (END STATION B) for detecting an

error, such as a cyclic-redundancy-check CRC or forward-error-correction FEC in the

data packet, during the transmission (ACK) from the (END STATION B) to the

identified communications device (END STATION A).

Regarding Claim 18, Haartsen discloses an identified communications device

(END STATION A) which handles the Error (NACK).

Regarding Claim 19, Haartsen discloses an identified communications device

(END STATION A) which initiates the transmission of data by transmitting an ARQ

request to responding communications device (END STATION B).

Regarding Claim 28, Haartsen discloses error detection during transmission of a

request (ARQ) from the identified communications device (END STATION A) to a

responding communications device (END STATION B).

Regarding Claim 29, Haartsen discloses an error (NACK) detected during

transmission of a response transmitted from a responding communications device

(END STATION B) to the identified communications device (END STATION A).

Regarding Claim 33, Haartsen discloses means (RELAY STATION), as shown in

Figure 4, for receiving an error message addressed to an initiator communications

device (END STATION A).

Regarding Claims 7, 8, 14, 23, 25, 26, Haartsen discloses an initiator

communications device, (END STATION A), a responding communications device

(END STATION B) and a switch located in (RELAY STATION), which are part of a

storage area network having storage capacity for storing packet data information for

transmission over cascaded links, where the responding communications device (END

STATION B) is a data store device for storing data information, as designated by the

packet storage boxes in FIG. 4.

Regarding Claim 9, Haartsen discloses a switch located in (RELAY STATION)

upon receiving the error message, such as a non-acknowledgement signal (NAK) by

(END STATION B), which then terminates the transmission and transmits the error

message (NAK) to (END STATION A).

Regarding Claims 11, 22, 31, Haartsen discloses identifying the

communications device such as (END STATION A) that initiated the transmission of

the data packets, which have error detection coding (D) and packet number (N). In this

case, (END STATION A) acts as the destination and checks the local error detection

coding. Once the packet has been correctly received, the destination acknowledges

receipt of the packet by acknowledging the end-to-end packet numbering to the source

(END STATION A). Further, the identifying step includes retrieving an address such as

packet number (N) corresponding to the communications device (END STATION A),

(col. 3, lines 5-15).

Regarding Claims 15, 24, 27, Haartsen discloses a communications device (END

STATION A) that transmitted the data to the switch located in (RELAY STATION) is not

notified of the error. The (END STATION A) is notified of the error, only when (END

STATION B) detects an error and transmits the error message (NAK) to (END

STATION A), or when (END STATION B) checks the transmitted packet for

correctness and sends an acknowledgement signal (ACK) to (END STATION A)

indicating no error.

Response to Arguments

8.   Applicant's arguments filed September 7, 2004 have been fully considered but

they are not persuasive. Claims 1-11, 13-31 and 33 are still rejected under 35

U.S.C. 102(b) as being anticipated by Haartsen (US 5699367), as set forth in the

present Office Action.

9.   In reference to claims 1-9, Applicant argues that upon detecting an error during

the transmission of the transaction response from a responding communications device,

a switch transmits "an error message to the initiator communications device", which

sends a transaction request. Rather than transmitting the error message to the

responding communications device, the switch transmits the error message to the

initiator communications device, as recited in the independent claim 1.

In response to Applicant's argument above, as stated in the Office Action,

Haartsen upon detecting an error, such as a cyclic-redundancy-check CRC or forward-

error-correction FEC in the data packet, during the transmission of the transaction

response (ACK), the responding communications device (END STATION B) terminates

the transmission and transmits an error message, such as a non-acknowledgement

signal (NAK) to the initiator communications device (END STATION A) in case the

packet has been incorrectly received by the (END STATION B).

In reference to claims 10-11, 13-31 and 33, Applicant argues that an error

message is transmitted to the communications device that initiated the transmission of

the data, rather than the communications device that actually transmitted the data, as

in claim 21, which recites transmitting "an error message to the identified

communications device (that initiated the transmission of the data) rather than reporting the error to the transmitting communications device (that transmitted the data).

In response to Applicant's argument above, Haartsen transmits an error message, such as a non-acknowledgement signal (NAK) to the initiator communications device (END STATION A) in case the packet has been incorrectly received by the (END STATION B), rather than reporting the error to the transmitting communications device (END STATION B).

Furthermore, Applicant argues that contrary to the Haartsen reference, the claims recite that an error message is sent to the initiator device, rather than the transmitting device. Applicant cites an example of a client computer and a storage device, where Haartsen's NACK method would send the error message to the storage device when an error is detected in the response sent from the storage device to the client computer. With the claimed invention, the error message is sent to the client computer, rather than to the storage device.

Contrary to Applicant's assertion, the communications device (END STATION B) sends the error message to the initiator communications device (END STATION A), since in this example the (END STATION A) is the client computer and the (END STATION B) is the storage device. Therefore, it would not be logical for Haartsen's NACK method to send the error message to the storage device as argued by the Applicant, since Haartsen transmits an error (NAK) to the client computer, as a result of the data packet being incorrectly received by the storage device (END STATION B).

Also, it is noted that the features upon which applicant relies in his arguments

(i.e., the communication example of a client computer and a storage device) are not

recited in the rejected claims. Although the claims are interpreted in light of the

specification, limitations from the specification or from the arguments are not read into

the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Conclusion

10.   Applicant's amendment necessitated the new ground(s) of rejection presented in

this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37

CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later

than SIX MONTHS from the date of this final action.

11.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to JAMES C KERVEROS whose telephone number is

(571) 272-3824. The examiner can normally be reached on 9:00 AM TO 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Albert Decady can be reached on (571) 272-3819. The fax phone number

for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

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For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free).

U.S. PATENT OFFICE
Examiner's Fax: (571) 273-3824
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Date: 18 November 2004
Office Action: Final Rejection

By: _____

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Examiner
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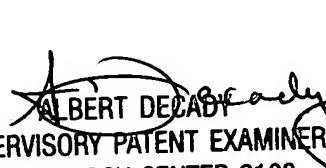
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